

Notice of Allowability

Application No.

09/982,926

Applicant(s)

NI, SHIH-HSIUNG

Examiner

Lina Yang

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/12/2005.
2. ☒ The allowed claim(s) is/are 1-21.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

1. This communication is in response to applicant's 10/10/2005 Amendment. All independent claims 1, 3, 5, 7, 12 and 17 are amended. Claims 1-21 are pending.

Allowable Subject Matter

2. Claims 1-21 are allowed.

The following is an examiner's statement of reasons for allowance.

The subject matter of claims 1-2 is allowable over prior art of record, because all prior arts fail to teach or suggest a method of prioritizing packet flows within a switch, said method comprising the steps of:

receiving a packet at an input port; stamping the packet with an arrival time;

classifying the packet into a flow, wherein the flow is determined based upon at least a class of service of the packet;

assigning the packet to a at least one queuing ring according to the flow of the packet, ***wherein the queuing ring comprises at least one list of pointers, each list of pointers being assigned to a specified flow and a head pointer in each of the at least one list represents the specified flow***, and

maintaining a flow ratio pending within the switch based upon the flow of the packet,

wherein a gap between head pointers of the list of pointer is calculated when one head pointer is added or deleted from the queuing ring; as recited in the claims.

The subject matters of claims 3-4 and 5-6 are allowed for the same reason set forth for claims 1-2.

The subject matter of claims 7-11 is allowable over prior art of record, because all prior arts fail to teach or suggest a switch for prioritizing and routing a packet through a communication system, said switch comprising:

an input port for receiving a packet from an input source and an output port for transmitting the packet to an output destination;

a queuing module configured to determine a flow of the packet and assign the packet in at least one queuing ring based upon the flow, wherein the flow is determined based upon at least a class of service of the packet and ***the queuing ring comprises at least one list of pointers, each list being assigned to one flows wherein a head pointer in each of the at least one list represents a specific flow;***

a scheduling module configured to schedule the transmission of the packet from the queue within a selected time interval before the transmission of a next outgoing packet;

~~a flow control module configured to maintain a flow ratio pending within the~~
switch based upon the flow of the packet, and to control a transmission rate of the
packet from the output port based upon the flow of the packet;

a conflict determination module configured to determine if a conflict exists when
the packet is scheduled to be transmitted from the output port;

a threshold indicator module configured to provide a threshold status based upon
the flow ratio; and

a transmission module to transmit the packet from the output port according to
the schedule determined by the scheduling module; as recited in the claims.

The subject matters of claims 12-16 and 17-21 are allowed for the same reason
set forth for claims 7-11.

Any comments considered necessary by applicant must be submitted no later
than the payment of the issue fee and, to avoid processing delays, should preferably
accompany the issue fee. Such submissions should be clearly labeled "Comments on
Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to
applicant's disclosure.

Tang et al. (U.S. Patent No. 6,195,332 B1) discloses a method for rate-based flow control protocol on a ring topology network utilizing ethernet packet format and ethernet equipment. The method operates on a communication network communicatively coupling a plurality of network nodes each representing a local area network (LAN). The method for controlling a transmission of a data packets on the ring-topology communication network uses the following steps. A flow path is determined for data packets in the communication network. In another step, limits are calculated for the flow paths of the data packets with respect to each of the network nodes such that the data packets have controlled access to transmit on the communication network. In a final step, the transmission of the data packets on the flow paths is controlled according to the limits and using a packet format and equipment that is directly compatible with the local area network.

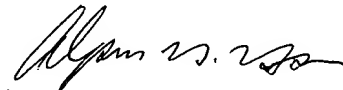
Sturges et al. (U.S. Patent Application Publication No. 20020114274 A1) discloses a communication system supports packet based (e.g. IP) networking service with end-to-end quality of service packet delivery mechanisms. More specifically, a local server, which resides on a customer's local area or wide area network, detects and marks packets for applications for different service levels will on the customer's network and prior to the packets being routed to an access or backbone network. The local server also coordinates with network services on a backbone network for enforcing access to the backbone network, coordinating setup of communication sessions and tracking lengths of sessions for billing purposes.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lina Yang whose telephone number is (571)272-3151. The examiner can normally be reached Monday through Wednesday between 7:00 a.m. and 7:30 p.m. eastern standard time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 517-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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ALPUS H. HSU
PRIMARY EXAMINER